

REMARKS

Claims 1, 3-16, and 26 are pending in the present application. Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the office action of May 15, 2006, the following actions were taken:

- (1) Claims 1, 3-16, and 26 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,841,116 to Schmidt (hereinafter "Schmidt").
- (2) Claims 7-10 were rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt in view of U.S. Patent No. 5,287,435 to Cohen et al. (hereinafter "Cohen").

It is respectfully submitted that the presently pending claims be examined and allowed.

Rejections under 35 U.S.C. § 102

The Examiner has rejected claims 1, 3-16, and 26 under 35 U.S.C. 102(e) as being anticipated by Schmidt. The Applicant refers to the communication filed on April 27, 2006, in which the proper basis for a finding of anticipation under § 102 is discussed in detail. Those remarks are incorporated herein by reference.

As a further matter, because the present case is after final, the Applicant respectfully request that the Examiner either 1) allow the case or 2) clearly set forth reasons for not allowing the case so that the record is clear for appeal. The Applicant's assert that the currently claimed subject matter is patentable over the cited art.

This being stated, the present invention provides a solid freeform fabrication system comprising a dispensing system adapted to separately dispense build material and support material, with a curing system adapted to harden dispensed build material before support material is dispensed. The fabrication system may further comprise a milling system adapted to mill the build material before said material is cured.

The Applicant submits that the Schmidt reference fails to teach all of the elements of the claimed system. Schmidt teaches a selective deposition modeling method in which a curable phase change build material is dispensed in a flowable

state, preferably with a noncurable phase change support material. Col. 9, lines 49-51. When dispensed, these materials undergo a phase change upon contact with a substrate or previously built layer. Col. 13, lines 22-24. The newly dispensed layer is planarized to achieve desired layer thickness, where said layer comprises both build material and support material. Only once planarization of both materials is completed can the build material be cured by exposing the layer to ultraviolet (UV) radiation. Col 13, lines 40-42 and 64-65.

Schmidt does not teach a curing system adapted according to the present invention. The curing system of the present invention is adapted to cure dispensed build material before support material is dispensed. In this way, bleeding of support material and build material across their contact interfaces is kept to a minimum, or even eliminated. Pg. 7, lines 26-29. Schmidt, while disclosing the capability of separately dispensing support and build materials, clearly teaches execution of the curing step after the dispensing steps are completed. Col. 13, lines 64-65.

This requirement is made even more explicit by the teaching in Schmidt that curing must follow any planarizing step. Planarizing is utilized to “establish the final layer thickness” of a completed layer. Col 13, lines 40-41 (emphasis added). Therefore, it is clear that planarizing must only take place after the materials making up the layer have been dispensed. Accordingly, since curing must follow planarizing, curing also necessarily follows the dispensing of all the material in the layer. Schmidt does not teach a curing step interposed between dispensing build material and support material, as provided by the Applicant’s system.

It follows therefore, that Schmidt also does not teach a curing system adapted to cure build material after it is dispensed but before support material is dispensed. The curing system disclosed in Schmidt is understood to be adapted to the method taught therein. That method clearly includes a sequence of steps that differs from that which results from practice of the present invention. Not only does the Schmidt reference fail to teach such a result, it fails to teach an adaptation of the disclosed apparatus that would produce the result.

Schmidt does not anticipate the invention provided in claims 1 and 26 because it does not teach each and every element recited therein. As such, it also does not anticipate claims 3-16 which include the elements of claim 1. Applicant therefore requests that these rejections be withdrawn.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 7-10 as being unpatentable under 35 U.S.C. § 103(a) over Schmidt in view of Cohen. The Applicant respectfully submits that these claims are patentable over the cited references for the reasons set forth below, and that the rejection should be withdrawn.

The Cohen reference teaches an apparatus for producing three-dimensional models, including an apparatus for sequentially depositing and curing photopolymer, preferably along with support material, and a machining unit for trimming a deposited layer to a uniform thickness. However, Cohen fails to teach an ink-jet dispensing system in conjunction with a curing system as provided in claim 1. The machining system disclosed in Cohen therefore does not render the milling system recited in dependent claims 7-10, neither alone nor in combination with Schmidt, because those references fail to teach or suggest each and every element included in those claims. Applicant therefore respectfully requests that these rejections be withdrawn.

Furthermore, without discussing the other § 103 rejections, Schmidt and Cohen fail to teach or suggest at least one element recited in claim 9. Claim 9 sets forth a milling system in which a first waste stream is for removing excess build material, and a second waste stream is for removing excess support material. Schmidt, however, clearly teaches only one waste collection stream for simultaneous removal of both types of material. Col. 14, lines 30-35. This arrangement necessarily arises from the sequence of fabrication steps taught in Schmidt, as discussed above. Schmidt therefore not only fails to teach the system set forth in claim 9, it actually teaches away from such a system. That reference therefore provides no motivation to arrive at the present invention in claim 9, either by modification or combination with Cohen. Reconsideration of this rejection is also requested in view of this additional basis for a finding of nonobviousness.

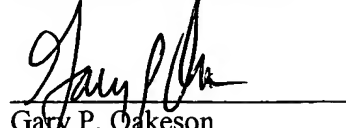
In view of the foregoing, Applicants believe that all of the pending claims present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the

Examiner is invited to telephone Jeff Limon at (541) 715-5979 so that such issues may be resolved as expeditiously as possible.

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Respectfully submitted,



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